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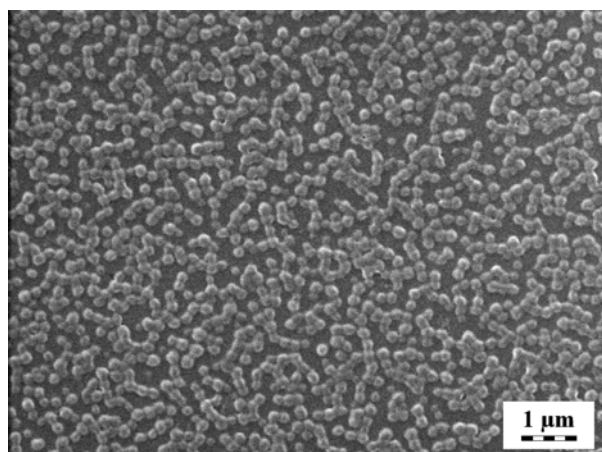
POLY(*N,N*-DIETHYLACRYLAMIDE) MICROSPHERES BY DISPERSION POLYMERIZATION

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Poly(*N,N*-diethylacrylamide) (PDEAAm)-microspheres were prepared by dispersion polymerization at 70 °C in aqueous solution using *N,N'*-methylenebisacrylamide as a crosslinker, ammonium persulfate (APS) as an initiator and poly(vinylpyrrolidone) (PVP) as a stabilizer. The effect of various polymerization parameters, such as concentration of initiator, crosslinker, monomer, and stabilizer and polymerization temperature on the properties of the microspheres was investigated. The Size of PDEAAm microspheres, their polydispersity, and morphological and temperature-induced swelling properties were characterized by scanning electron microscopy and dynamic light scattering. The hydrodynamic particle diameter decreased sharply as the temperature reached a critical value of ca. 30 °C. The microsphere diameter decreased with increasing concentration of both the APS initiator and PVP stabilizer. A fairly narrow microsphere size distribution was obtained with a specific crosslinker concentration. The higher the degree of crosslinking, the lower the swelling ratio.

The financial support of Ministry of Education, Youth and Sports of the Czech Republic, project No. 2B06053, is gratefully acknowledged.



SEM of thermoresponsive poly(*N,N*-diethylacrylamide) microspheres obtain by the dispersion polymerization